gradient establishing a plurality of cusp patterns on said wall, and wherein each of the plurality of magnetic elements spans substantially from the top end to the bottom end of the process chamber; and

a device for rotating magnetic fields of the plurality of magnetic elements so that each magnetic field of each magnetic element is individually rotated at a same angular speed and angular direction around an individual axis of rotation passing through the magnetic element to change [changing] said cusp pattern with respect to said wall connected between the plurality of magnetic elements and the process chamber.

3. (Once Amended) The apparatus, as recited in claim 2, [wherein the magnetic field has an azimuthally symmetric radial gradient] further comprising an RF antenna adjacent to and outside of the process chamber..

8. (Once Amended) The apparatus, as recited in claim [3, wherein said device for changing said cusp pattern comprises a device for moving at least one of said magnetic elements] 4, wherein the axis of rotation for each magnetic element extends along the length of the magnetic element.

9. (Twice Amended) The apparatus, as recited in claim [8, wherein said device for moving at least one of said magnetic elements comprises a device for moving a plurality of said plurality of magnetic elements individually, wherein each magnetic element is individually rotated around an individual axis of rotation passing through the magnetic element] 3, wherein said plurality of magnetic elements are electromagnets.

10. (Twice Amended) The apparatus, as recited in claim 9, wherein said device for [moving said plurality of magnetic elements comprises a device for rotating said plurality of magnetic elements in an alternating pattern] rotating magnetic fields comprises a device for varying current in the electromagnets.

11. (Twice Amended) The apparatus, as recited in claim [9, wherein said device for moving said plurality of said magnetic elements comprises a device for rotating said magnetic elements in a same direction] 3 wherein each magnetic element comprises a first electromagnet and a second electromagnet, and wherein the device for rotating the magnetic fields comprises an electrical control for varying the current in the first electromagnet and the

second electromagnet, so that the current in the first electromagnetic element is out of phase with the current in the second electromagnetic element.

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)

16. (Cancelled)

17. (Cancelled)

18. (Cancelled)

28. (Twice Amended) A plasma processing apparatus for processing a substrate, comprising:

a process chamber, defined at least in part by a top end and a bottom end and a wall extending between the top end and the bottom end, within which a plasma is ignited and sustained for said processing;

a magnetic array having a plurality of magnetic elements that are disposed around the periphery of said process chamber around the outside of said wall, said plurality of magnetic elements being configured to produce an azimuthally symmetric radial gradient magnetic field establishing a plurality of cusp patterns on said wall, and wherein each of the plurality of magnetic elements span substantially from the top end to the bottom end of the process chamber; and

a device for rotating magnetic fields of each of the plurality of magnetic elements so that each magnetic field of each magnetic element is individually rotated at a same speed and angular direction around an individual axis of rotation passing through the magnetic element to move [moving] said cusp patterns with respect to said wall connected between the plurality of magnetic elements and the process chamber.

30. (Once Amended)The plasma processing apparatus, as recited in claim 29, [wherein the device for changing said cusp patterns comprises a device for rotating at least one magnetic

element of the plurality of magnetic elements around a rotation axis, which passes through the at least one magnetic element] further comprising an RF antenna adjacent to and outside of the process chamber.

37. (New) The plasma processing apparatus, as recited in claim 28, wherein the process chamber has a chamber axis that extends across a height of the process chamber, and wherein the rotation axis of the at least one magnetic element is parallel to the chamber axis.

38. (New) The plasma processing apparatus, as recited in claim 37, wherein each magnetic element has a length, wherein the axis of rotation for each magnetic element extends along the length of the magnetic element.

39. (New) The plasma processing apparatus, as recited in claim 28, wherein each magnetic element comprises a first electromagnet and a second electromagnet, wherein the device for rotating the magnetic fields comprises an electrical control for varying the current in the first electromagnet and the second electromagnet so that the current in the first electromagnet is out of phase with the current in the second electromagnet.

40. (New) The apparatus, as recited in claim 3, wherein the magnetic field at the substrate is substantially zero.

41. (New) The apparatus, as recited in claim 1, wherein said magnetic elements are permanent magnets and each magnetic element has a length that extends substantially from the top end to the bottom end of the process chamber.

REMARKS

Claims 1, 3, 8-11, 28, and 30 have been amended. Claims 12-18 have been cancelled. Claims 37-41 have been added. Entry of this Amendment and reconsideration of the application are respectfully requested based on the following remarks.

Rejections under 35 U.S.C. § 102

The Examiner rejected claims 1-11, and 28-36 as being anticipated by U.S. Patent No. 6,341,574B1 to Bailey et al. Bailey does not disclose a device for rotating the magnetic fields of each magnetic element at a same angular speed and same angular direction to create